



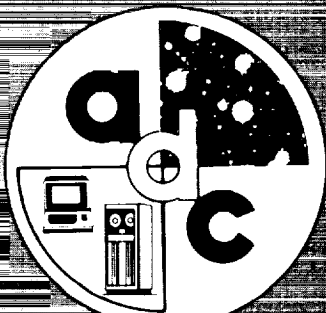
National Space Science Data Center/
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A CATALOG OF STELLAR SPECTROPHOTOMETRY

(Adelman et al. 1989)

Documentation for the Machine-Readable Version



January 1990

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***A CATALOG OF STELLAR
SPECTROPHOTOMETRY***

(Adelman *et al.* 1989)

Documentation for the Machine-Readable Version

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January 1990

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Abstract

The machine-readable version of the catalog, as it is currently being distributed from the astronomical data centers, is described. The catalog is a collection of spectrophotometric observations made by Adelman, Pyper, Shore, and White using rotating grating scanners and calibrated with the fluxes of Vega. The observations cover various wavelength regions between about 330 nm and 1080 nm.

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Abstract iii

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1.0 Introduction

1.1 Description

A Catalog of Stellar Spectrophotometry is a collection of spectrophotometric measurements obtained with rotating grating scanners attached to various telescopes at the Kitt Peak National, Mount Wilson, and Palomar Observatories. The observations were made during the 1970s and early 1980s, both individually and jointly, by S. J. Adelman, D. M. Pyper, S. N. Shore, and R. E. White, and are contained and analyzed in several series of papers included in the bibliography for this documents and in the source reference. All measurements were calibrated with the fluxes of α Lyrae (Vega), as presented by Hayes and Latham (1975). The catalog was compiled for purposes of making the collection of digital data available in a single, convenient location and to make permanent archiving and distribution of the complete set of observations possible.

This document describes the machine-readable version of *A Catalog of Stellar Spectrophotometry* as it is currently being distributed from the international network of astronomical data centers. It is intended to enable users of the machine version to read and process the data without problems and guesswork. Although this document may be used without reference to the source publication, which is essentially only an announcement of the catalog's availability, the original series of papers referred to in the bibliography should be consulted before the spectrophotometric observations are used for scientific purposes.

A copy of this document should be transmitted to any recipient of the machine-readable catalog originating from the data centers.

1.2 Source Reference

Adelman, S. J., Pyper, D. M., Shore, S. N., White, R. E., and Warren, W. H. Jr. 1989, *Astron. Astrophys. Suppl.* **81**, 221-223.

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2.0 Structure

2.1 File Summary

The machine version of *A Catalog of Stellar Spectrophotometry* consists of two files. The first file contains textual information, such as introductory remarks, a complete bibliography of original papers where the observations were first presented and discussed, and an index of observed stars. The second file contains the spectrophotometric data.

Table 1 gives the machine-independent file attributes. All logical records are of fixed length, and, if the atlas is received on magnetic tape, it will contain blocks of fixed length (as noted below) except that the last block of each file may be short.

<i>A Catalog of Stellar Spectrophotometry</i> (Adelman <i>et al.</i> 1989)				
File	Contents	Record Format	Logical Record Length	Total Number of Logical Records
1	Text	FB	80	311
2	Data	FB	70	10625

Table 1. Summary Description of Catalog Files: FB = Fixed length blocks (last may be short)

The information contained in the above table is sufficient for a user to describe the indigenous characteristics of the machine-readable version of *A Catalog of Stellar Spectrophotometry* to a computer. Information easily varied from installation to installation, such as block size (physical record length), blocking factor (number of logical records per physical record), total number of blocks, density, number of tracks and character coding (ASCII, EBCDIC) for tapes, is not included, but should always accompany secondary copies if any are supplied to other users or installations.

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2.2 Text File (File 1 of 2)

This file contains free-field textual information only and should be used only as reference material. A brief description of the data that may be given for each star is followed by a complete bibliography of the source papers and an index, arranged by right ascension, of the stars in the catalog.

Byte(s)	Fortran Format	Data
1-80	A80	Mixed case text

Table 2. Text File Record Format

2.3 Catalog (File 2 of 2)

The data file contains all spectrophotometric observations of the catalog. Each observation is preceded by a set of two header records giving object identifications and other relevant information. The observations are presented as data pairs with wavelength (in Å) and the normalized magnitude at that wavelength. The number of data pairs in a spectrum varies depending on the instrument used and the λ range, but the number of pairs is given in the second header record, as described below. Thus, after reading the header records, the following simple Fortran statements can be used to read the data array (there are five data pairs per logical record):

```

      Real*4 Lam(500),Mag(500)
      Read (1,10) (Lam(n),Mag(N), N = 1,NWL)
10    Format (5(F7.0,F7.3))
      Read (1,Fmt=' ')

```

where NWL is the number of wavelengths read from the second header record.

The second read statement skips the blank record that follows each spectrum. Although these blank records are obviously superfluous in the machine version, they are included for easier readability if a user wishes to make a printed version of the catalog.

The following tables describe the formats of the header records that must be read before processing the data points. The suggested format specifications are given for reference purposes only and can be modified depending on individual programming and processing requirements; e.g., a user may wish to read star identifiers from the major catalogs as numbers (only character formats are given in the tables, except for NWL, which must be read with a numerical format so that it can be used as a DO loop index). The descriptions of the data indicate the bytes that should be used to read with numerical specifications.

Byte(s)	Units	Suggested Format	Default Value	Data
2-9	---	A8	---	Star name
10-18	---	A9	---	HD number
19	---	1X	---	Blank
20-27	---	A8	---	HR number
28-32	---	5X	---	Blank
33-41	---	A9	---	B-V
42-43	---	2X	---	Blank
44-70	---	A27	---	Spectral type and comments

Table 3. Contents of the First Record in Each Spectrum

Star name	Name of star, usually a Bayer designation and constellation identification or variable-star designation.
HD number	Number in the <i>Henry Draper Catalogue</i> (Cannon and Pickering 1918-24). The letters "HD" occur in bytes 10-11 and the number in 13-18.
HR number	Number in the <i>Bright Star Catalogue</i> (Hoffleit 1982). The letters "HR" occur in bytes 20-21, the number in 23-26, and a component designation in 27 (if applicable).
B-V	<i>B-V</i> in the Johnson and Morgan <i>UBV</i> system, taken from a variety of sources. The characters "B-V" occur in bytes 33-35 and the value in 37-41.
Spectral type	Spectral types taken from a variety of sources. The characters "SP" occur in bytes 44-45. The spectral type may be followed by comments.

Byte(s)	Units	Suggested Format	Default Value	Data
2-6	---	A5	---	Bandwidth
7-8	---	2X	---	Blank
9-16	---	A8	---	Paper identification
17-18	---	2X	---	Blank
19-23	---	A5	---	Number of scans
24-25	---	2X	---	Blank
26-41	---	A16	---	Heliocentric Julian date
42-47	---	2X	---	Blank
48-50	---	A3	---	The letters NWL
51-53	---	I3	---	Number of data pairs (wavelengths)
54-58	---	5X	---	Blank
59-70	---	A12	---	Magnitude at 5000 Å

Table 4. Contents of the Second Record in Each Spectrum

Bandwidth	Bandwidth in the second order (Å).
Paper	The number of the paper in which the original data appeared, as given in the bibliography included in the text file.
Number of scans	Number of separate scans included in the average spectrum.
HJD	Heliocentric Julian date for variables.
NWL	Number of wavelengths (data pairs) in the spectrum.
m5000	The magnitude at 5000 Å.

3.0 History

3.1 Remarks

The text and data files were prepared initially at The Citadel by S. J. Adelman following discussions about an acceptable structure and format for the catalog. Proofreading was done with the assistance of Carol J. Adelman and Jeffrey A. Garret. The data were transferred to the Astronomical Data Center via BITnet. Extensive checks of the header records resulted in minor corrections and changes, *e.g.*, to correct shifted data and to insert mixed case characters where appropriate.

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4.0 Acknowledgments and References

4.1 Acknowledgments

Appropriate acknowledgments are given in the source reference. The preparation of the machine version was greatly assisted by the proofreading of Carol J. Adelman and Jeffrey A. Garret.

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Appendix A. Sample Listing

The sample listing given on the following pages shows logical records exactly as they are recorded in the machine-readable version of the atlas. Groups of records from the beginning and end of each file are illustrated. The beginning of each record and the bytes within the record are indicated by the column heading index across the top of each page (digits read vertically).

L I S T I N G O F R E C O R D S F R O M D A T A F I L E

Data File Name: Stellar Spectroph Intro

Records 1 to 20

Data File 110

Record Length 80 bytes

Input VOLSER ADC003

C O L U M N
H E A D I N G
I N D E X

111111111122222222223333333333444444444455555555556666666666777777777788888888889999
12345678901234567890123456789012345678901234567890123456789012345678901234567890123

A C A T A L O G O F S T E L L A R S P E C T R O P H O T O M E T R I C D A T A

Saul J. Adelman, Diane M. Pyper, Steven N. Shore, Richard E. White,
and Wayne M. Warren Jr.

The stellar data are given in order of right ascension 1900.

For each star the following data may be given:

1. Star identification: name, HD Number, and HR Number
2. B-V
3. Spectral Type (SP)
4. Bandwidth in the second order (BW) in angstroms
5. Paper data appeared in and the number of scans (NS)
6. The heliocentric Julian date (MJD) for variables
7. The number of wavelength values (MWL)
8. The magnitude at 5000 angstroms (m5000)

Note: Differences from published values of 0.001 magnitude may result from different ways of rounding off. Some scans of possible values are given, while only the averages have been previously published.

Record 1
Record 2
Record 3
Record 4
Record 5
Record 6
Record 7
Record 8
Record 9
Record 10
Record 11
Record 12
Record 13
Record 14
Record 15
Record 16
Record 17
Record 18
Record 19
Record 20

